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(71) Applicant: **FUJITSU LTD**

(72) Inventor: **MORI HARUHISA
WADA KUNIHIKO
IGARASHI TAKASHI**

**(54) ELECTRIC CHARGE NEUTRALIZING UNIT FOR
ION RADIATION DEVICE**

and the reliability.

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(57) Abstract:

PURPOSE: To prevent a heavy metal contamination of an ion beam irradiated substrate and the thermal radiation to the substrate, by using a photoelectron source combining a light source and a photoelectron screen as an electron source to neutralize the electric charge of an ion radiating device, instead of a conventional thermal electron source with a filament.

CONSTITUTION: This device has an electron source which consists of a light source 7 and a photoelectron screen 8 to emit electrons by receiving the light from the light source 7, a drawing-out electrode 5 to draw out the electron current from the electron source, and a drawing-out power source 6 to give a negative potential to the photoelectron screen 8. In this case, when the electrons have a high energy, the electron current impinges on the drawing-out electrode 5, and the resultant secondary electrons neutralize the accumulated charge on a substrate 2 which is irradiated by the ion flow 1. As a result, a heavy metal contamination of the wafer 2 is prevented, and the thermal radiation to the wafer 2 is reduced, to improve the device performance

